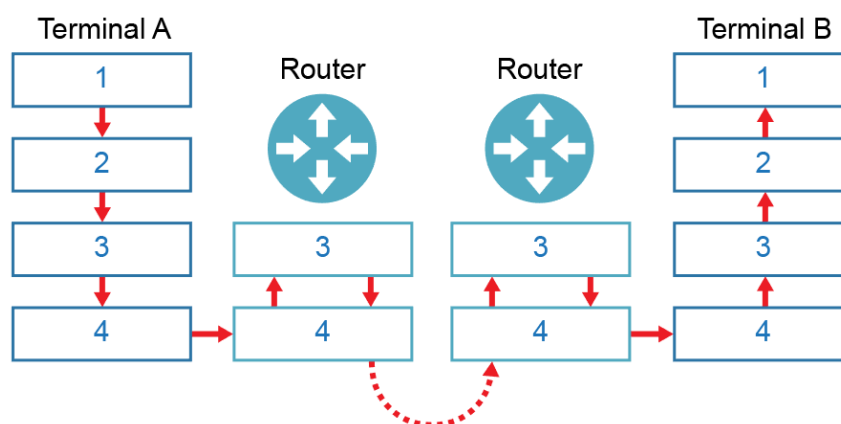




Homework 2 Packet switching and routers

1. Data is sent across a network using a method called packet switching.
 - a. Explain what is meant by the term 'packet switching'. [3]
 - b. Explain why the sender's address is included in the packet header. [2]
2. Packets are forwarded from one node to another in a network. These may be routers or gateways. Briefly describe the difference between a router and a gateway.[1]
3. A file is being transferred between two computers across a network.
 - a) Identify a protocol that could be used to transfer this file [1]
 - b) The network uses TCP/IP as shown below







The numbers represent the layers of the TCP/IP stack. Name the layers in the table below:

[4]

Label	Layer
1	
2	
3	
4	

- c) Data packets travel from router to router on layers 3 and 4. As this happens, their headers change. Explain why this is the case with reference to IP and MAC addresses.

[5]

4. A self-employed Accountant runs his own business from a small office. He has an email server that is used to communicate with his clients.

- a) Identify **one** protocol and its associated port that he can use to read email held on this server.

[2]

- b) The email account also uses his Smartphone to access emails. He finds that emails he reads in the office do not appear on his phone. Explain why this is.

[2]



[Total 20 Marks]